

ED 027 622

EA 002 062

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Some Principles and Practices of Evaluation.

Pub Date 1 Nov 68

Note-19p.; Paper presented to the West Virginia State Department of Education In-Service Program (November 1, 1968).

EDRS Price MF-\$0.25 HC-\$1.05

Descriptors-Behavioral Objectives, Bibliographies, *Educational Objectives, Educational Programs, *Evaluation Methods, *Program Evaluation

Evaluation is the process of determining the extent to which specified objectives have been reached. As a professional tool, it is used to (1) appraise the achievements of individual students; (2) diagnose the learning problems of an individual student or class in order to devise future teaching strategies; and (3) appraise the effectiveness of curricula, courses, instructional materials, and administrative and organizational structures. Product evaluation, measurement of the performance of students, holds the greatest promise for helping to improve the overall educational program. Steps in product evaluation include (1) definition of educational objectives to be achieved, (2) translation of the goals into descriptions of behavior, (3) identification of situations in which the behavior can be observed, (4) development of some measurement device, (5) application of the evaluation device to the educational program, (6) analysis of evidence obtained, and (7) statement of conclusions. Once evaluation has been expanded into performance terms, difficult tasks of data collection, organization, analysis, and interpretation arise. A bibliography listing 87 books, pamphlets, and articles is included to assist in further study of evaluation. (TT)

SOME PRINCIPLES AND PRACTICES OF EVALUATION

THE TITLE OF MY PAPER IS "SOME PRINCIPLES AND PRACTICES OF EVALUATION." ANY OF YOU AT ALL FAMILIAR WITH THIS TOPIC KNOW VERY WELL IT COULD COVER SEVERAL 2-3-HOUR CREDIT COURSES. OBVIOUSLY, THE TIME ALLOTTED MAKES IT MANDATORY THAT THE TOPIC BE DELIMITED. IN THE DEVELOPMENT OF THIS PAPER I WAS ALSO FACED WITH TWO OTHER CHARGES:

- A. MAKE IT RELEVANT TO THE FOLLOWING ACTIVITY, AND
- B. USE THE KISS TECHNIQUE--KEEP IT SIMPLE STUPID!

I HAVE TRIED TO ABIDE WITH ALL THREE CHARGES--THE TIME ELEMENT, THE RELEVANCY, AND THE SIMPLENESS.

MY PAPER HAS BEEN ORGANIZED AROUND A SERIES OF QUESTIONS, SUCH AS:

1. WHY EVALUATE EDUCATIONAL PROGRAMS?
2. WHAT IS EVALUATION?
3. WHAT METHOD OF EVALUATION SHOULD BE APPLIED?
4. HOW DO YOU PLAN FOR THE SO-CALLED "PRODUCT TYPE" OF EVALUATION?
5. WHEN SHOULD EVALUATION BE ATTEMPTED?
6. WHAT IS THE PRESENT TREND IN EVALUATION?

BEFORE I BEGIN TO ANSWER ANY OF THE QUESTIONS I WOULD LIKE TO REFER TO SOME TERMINOLOGY USUALLY ASSOCIATED WITH EVALUATION AND ATTEMPT TO APPLY SOME GROUND RULES. TERMS SUCH AS EVALUATION, ASSESSMENT, APPRAISAL, AND MEASUREMENT, ALL MEAN TO MEASURE SOMETHING. THUS, AS FAR AS I AM CONCERNED THEY CAN BE USED INTERCHANGEABLY. I'M PRETTY SAFE IN MAKING THIS STATEMENT BECAUSE THIS IS THE WAY THEY ARE USED IN THE LITERATURE. THE WORD SURVEY ALSO APPEARS TO BE USED BY SOME AUTHORS TO MEAN ABOUT THE SAME THING; HOWEVER, IT SIGNIFIES SOMETHING A LITTLE DIFFERENT TO ME. I USUALLY LIKE TO THINK OF A SURVEY BEING USED WHEN A PROJECT IS FIRST PLANNED. IT ASSISTS IN DETERMINING THE FEASIBILITY OF A PROPOSED PROGRAM BY DESCRIBING THE ENVIRONMENT AND IDENTIFYING SOME OF THE UNMET NEEDS.

THERE ARE OTHER TERMS I PROBABLY SHOULD ALSO DEFINE SUCH AS BEHAVIORAL OBJECTIVES, LEARNING OUTCOMES, PERFORMANCE TERMS AND OPERATIONAL TERMS; HOWEVER, THE ELEMENT OF TIME DOESN'T PERMIT US TO LINGER VERY LONG ON DEFINITIONS. WE MUST NOW MOVE INTO ANSWERING THE QUESTIONS RAISED.

WHY EVALUATE EDUCATIONAL PROGRAMS?

FOR MANY REASONS, EVALUATION HAS SUDDENLY ACHIEVED A NEW PROMINENCE. THE EDUCATION COMMUNITY AND THE LAY PUBLIC AS WELL HAVE SUDDENLY COME TO BELIEVE THAT EVALUATION IS NOT ONLY POSSIBLE, BUT IS ESSENTIAL. AS A MATTER OF FACT, WE HAVE BEEN TOLD THIS FOR YEARS, NOW THEY ARE LOOKING FOR US TO DELIVER. THIS PRESENTS US WITH AN UNPARALLELED OPPORTUNITY, BUT IT ALSO PRESENTS US WITH AN EXTRAORDINARILY MESSY SET OF PROBLEMS IN HOW TO GET IT DONE. THE JOB IS MUCH TOUGHER THAN MOST PEOPLE REALIZE.

COMMISSIONER OF EDUCATION, HAROLD HOWE, CITES ONE OF THE SIGNIFICANT REASONS IN THE FOLLOWING QUOTATION:

...EVALUATION HAS BECOME A SORT OF SACRED COW IN EDUCATION IN THE SENSE THAT EVERYONE, BOTH EDUCATORS AND LAYMEN, THEORETICALLY BELIEVE IN IT. NOT MANY PEOPLE KNOW WHAT IT IS OR WHAT TO DO WITH IT, BUT IT IS NEVERTHELESS WIDELY REGARDED AS 'A GOOD THING.' THE VAGUE NOTION IS THAT WE CAN FIND OUT THROUGH SOME PROCEDURE (SCIENTIFIC OR OTHERWISE) WHAT WE ARE ACCOMPLISHING WITH ALL THESE FEDERAL DOLLARS SPENT ON EDUCATION.

BESIDES THE NEED TO SATISFY THE LEGAL REQUIREMENTS OF THE VARIOUS FEDERAL PROGRAMS AS WELL AS PUBLIC OPINION WHICH DETERMINES THE MORAL AND FINANCIAL SUPPORT GIVEN TO EDUCATIONAL POLICIES AND PRACTICES---EVALUATION IS A PROFESSIONAL TOOL WHICH SHOULD PROVIDE EDUCATORS WITH SOUND AND ADEQUATE INFORMATION ON EDUCATIONAL RESULTS.

AS A PROFESSIONAL TOOL, EVALUATION IS USED:

1. TO APPRAISE THE ACHIEVEMENTS OF INDIVIDUAL STUDENTS.
2. TO DIAGNOSE THE LEARNING DIFFICULTIES OF AN INDIVIDUAL STUDENT OR CLASS IN ORDER TO DEVISE FUTURE TEACHING STRATEGIES.
3. TO APPRAISE THE EFFECTIVENESS OF A CURRICULUM, OF A COURSE, OF INSTRUCTIONAL MATERIALS AND PROCEDURES, AND OF ADMINISTRATIVE AND ORGANIZATIONAL STRUCTURES AND PROCESSES.

IN SUMMARY, PROFESSIONALS USE EVALUATION AS A MEANS OF ENCOURAGING PROGRAM MODIFICATION AND REVISION, OR EVEN THE ABANDONMENT OF THE PROGRAM ALTOGETHER. IT CAN BE USED TO DETERMINE THE EFFECTIVENESS OF A PROGRAM OR PROJECT.

SINCE THE STATE DEPARTMENT USUALLY HAS THE RESPONSIBILITY OF COMBINING THE FINAL RESULTS OF PROJECTS AND PROGRAMS UNDER ITS AUSPICES, IT IS NECESSARY THAT THIS GROUP ADVOCATE EVALUATION PROCEDURES WHICH WILL GREATLY FACILITATE THE ASSESSMENT OF THE OVERALL IMPACT.

WHAT IS EVALUATION?

AS USED IN THIS PAPER, EVALUATION IS THE PROCESS OF DETERMINING THE EXTENT TO WHICH SPECIFIED OBJECTIVES HAVE BEEN REACHED. STATED IN ANOTHER WAY, EVALUATION IS THE PROCESS OF ASSESSING THE EXTENT AND DIRECTION RESULTING FROM AN EDUCATIONAL EXPERIENCE. OBVIOUSLY, BASELINE DATA IS REQUIRED TO MAKE THOSE DECISIONS WHICH DETERMINE THE DIRECTION OF THE CHANGE PROCESS. EVALUATION SHOULD ANSWER THIS QUESTION - HAVE THE EDUCATIONAL ATTAINMENTS OF CHILDREN PARTICIPATING IN THE PROGRAM BEEN RAISED?

RALPH TYLER, CHAIRMAN OF THE EXPLORATION COMMITTEE OF THE NATIONAL ASSESSMENT PROJECT STATED:

... 'EVALUATION IS THE PROCESS FOR DETERMINING THE DEGREE TO WHICH CHANGES IN BEHAVIOR ARE ACTUALLY TAKING PLACE.'

ROBERT TRAVERS IN HIS BOOK EDUCATIONAL MEASUREMENT POINTS OUT THAT EVALUATION IS MORE THAN MERELY DETERMINING THE OUTCOMES (I.E., CHANGES PRODUCED IN THE STUDENTS). HE STATES THAT EVALUATION ALSO INVOLVES A JUDGMENT OF THE DESIRABILITY OF WHATEVER OUTCOMES ARE DEMONSTRATED TO OCCUR.

WHAT METHOD OF EVALUATION SHOULD BE APPLIED?

THIS PAPER IS BASED UPON THE PREMISE THAT THE KIND OF EVALUATION WHICH HOLDS THE GREATEST PROMISE FOR HELPING TO IMPROVE THE OVERALL EDUCATIONAL PROGRAM IS PRODUCT EVALUATION. THIS APPROACH PRESENTS THE PROBLEM OF DEVISING PROCEDURES WHICH WILL YIELD TRUTHFUL AND ACCURATE APPRAISALS OF PRODUCTS THAT REPRESENT STUDENT OUTCOMES.

NOW I HAVE RAISED THE QUESTION IN YOUR MIND - JUST WHAT IS PRODUCT EVALUATION?

IN FORMULATING EDUCATIONAL OBJECTIVES, EDUCATORS HAVE DRAWN THEM FROM THREE DISTINCT DOMAINS, WHICH MAY BE DESIGNATED AS:

1. STRUCTURE OUTCOMES
2. PROCESS OUTCOMES
3. PRODUCT OUTCOMES

LET ME TRY TO DEFINE EACH OF THESE DOMAINS FOR YOU.

1. STRUCTURAL OUTCOME - REFERS TO SOME ASPECT OF SCHOOL PLANT, EQUIPMENT, OR ADMINISTRATIVE ORGANIZATION. EXAMPLES MAY BE STUDENT-TEACHER RATIOS, NUMBER OF CLASSROOMS, TEACHER SALARIES, TOTAL ENROLLMENT, AGE OF FACILITIES, ETC.
2. PROCESS OUTCOME - REFERS TO SOME ASPECT OF SCHOOL OR CLASSROOM PROCEDURE. EXAMPLES MAY BE: GUIDANCE COUNSELORS IN BOTH THE ELEMENTARY AND SECONDARY SCHOOLS, MODERN MATH, I.T.A., OPEN-COURT, ETC.

EVALUATION OF BOTH THE STRUCTURE AND PROCESS OUTCOME TYPES, GENERALLY CAN ONLY ASSUME A HIGH CORRELATION EXISTS WITH DESIRED OUTCOMES. THE INSTRUMENTS USED TO EVALUATE OBJECTIVES IN THESE DOMAINS TAKE THE FORM OF CHECKLISTS AND RATING SCALES. THESE ARE THE SO-CALLED "DO-IT-YOURSELF" EVALUATION DEVICES, SUCH AS:

- A. EVALUATIVE CRITERIA OF THE COOPERATIVE STUDY OF SECONDARY SCHOOLS
- B. CRITERIA FOR EVALUATING JUNIOR HIGH SCHOOLS
- C. OTHERS

SUCH APPRAISALS INVOLVE A SERIES OF ASSUMPTIONS THAT CERTAIN STRUCTURES OR PROCESSES WILL IN FACT PRODUCE THE DESIRED END PRODUCT, ASSUMPTIONS WHICH ARE RARELY SUBJECTED TO TESTS.

NOW, WHAT IS PRODUCT EVALUATION? IT REFERS TO SOME PERFORMANCE EXHIBITED BY A STUDENT THROUGH WHICH HE SHOWS HIS ABILITY, INTEREST, ATTITUDE, OR ADJUSTMENT (I.E., WHEN THE STUDENT SPONTANEOUSLY ENGAGES IN A WIDE RANGE OF GOOD READING).

BECAUSE OF THE DIFFICULTIES IN MEASURING THE PRODUCTS OF EDUCATION, WHICH REPRESENT THE ULTIMATE OBJECTIVES OF THE EDUCATIONAL ENTERPRISE, THERE IS A STRONG TENDENCY BY EDUCATORS TO RETREAT TO APPRAISING THE STRUCTURE OF THE SCHOOL SYSTEM AND THE PROCESSES GOING ON WITHIN. NEVERTHELESS, IT IS THE PRODUCT OUTCOME TYPE OF EVALUATION WHICH WILL BE DISCUSSED FURTHER IN THIS PAPER.

HOW DO YOU PLAN FOR THE PRODUCT TYPE OF EVALUATION?

PROBABLY THE FIRST THING WE SHOULD DO IS TAKE A LOOK AT THE NECESSARY STEPS IN THE EVALUATION PROCESS, AND THEN GO BACK AND FOCUS ON ONE OR TWO OF THE MOST DIFFICULT STEPS AS TIME WILL PERMIT.

HOWEVER, BEFORE WE GET INTO THE "STEPS," I WOULD LIKE TO EMPHASIZE AT LEAST TWO POINTS. FIRST, THE DEVELOPMENT OF AN EVALUATION PLAN RELATIVE TO ANY EDUCATIONAL PROGRAM EITHER BEGINS WHEN YOU FIRST BEGIN TO THINK ABOUT THE PROGRAM OR EVEN BEFORE. (I.E., YOU MAY WANT TO CONDUCT A FEASIBILITY STUDY TO IDENTIFY THE UNMET NEEDS.)

THE SECOND POINT DEALS WITH OBJECTIVITY. AS WE THINK OF EVALUATION, WE SHOULD NOT ATTEMPT TO PROVE ANY PARTICULAR POINT OF VIEW. OUR EVALUATION PROCEDURES MUST BE CARRIED OUT HONESTLY AND WITH NO PRECONCEIVED NOTIONS OF EXACTLY WHAT THE END RESULT OUGHT TO BE OR MUST BE. ENOUGH OF THAT! NOW, LET'S TAKE A LOOK AT THE VARIOUS STEPS ONE GOES THROUGH IN USING THE PRODUCT OUTCOME TYPE OF EVALUATION.

STEP 1. DEFINE EDUCATIONAL OBJECTIVES (PREFERABLY IN TERMS OF SPECIFIC UNITS OF OUTPUT) TO BE ACHIEVED THROUGH THE EXPERIENCES BEING EVALUATED.

STEP 2. TRANSLATION OF THE EDUCATIONAL GOALS INTO DESCRIPTIONS OF BEHAVIOR WHICH WILL BE DISPLAYED IF THE OBJECTIVES ARE ACHIEVED.

STEP 3. IDENTIFICATION OF SITUATIONS IN WHICH THE PRESENCE OR ABSENCE OF THE DESIGNATED BEHAVIOR CAN BE OBSERVED AND RECORDED.

STEP 4. ESTABLISHMENT OF SOME TYPE OF INTERPRETIVE DEVICE (STANDARD OR NORM) WHICH CAN BE USED IN MEASURING DESIRED GROWTH.

STEP 5. APPLICATION OF THE EVALUATION METHODS DERIVED FROM STEPS 3 AND 4 TO ALL THOSE PARTICIPATING IN THE PROGRAM.

STEP 6. ANALYSIS OF EVIDENCE OBTAINED BY THE EVALUATION DEVICES IN TERMS OF PROGRESS TOWARD THE DEFINED OBJECTIVES.

STEP 7. STATEMENT OF CONCLUSIONS REGARDING EFFECTIVENESS IN TERMS OF THE EXTENT TO WHICH OBJECTIVES WERE ACHIEVED.

AT THIS TIME, I WOULD LIKE TO REFER BACK TO STEPS 1 AND 2: DEFINING GOALS AND TRANSLATING THEM INTO DESCRIPTIONS OF BEHAVIOR. THE PROCESS OF ENUMERATING THE GOALS OF THE PROPOSED PROGRAM IS PRIMARILY A RATIONALE AND JUDGMENTAL MATTER. JUDGMENTS MAY BE MADE BY VARIOUS GROUPS AND GATHERED BY VARIOUS MEANS. (I.E., CONFERENCE AND COMMITTEE DISCUSSION.)

AS A RULE, THE INITIAL GOALS WHICH EMERGE DO NOT PROVIDE A SUITABLE BASIS FOR A PROGRAM OF EVALUATION, SINCE THEY ARE USUALLY EXPRESSED IN VERY GENERAL TERMS. GOALS EXPRESSED IN GENERAL TERMS FREQUENTLY ARE VAGUE, CONVEY DIFFERENT MEANINGS TO DIFFERENT READERS, AND ARE FAR REMOVED FROM THE PRACTICAL OPERATION EITHER OF TEACHING OR APPRAISING.

THE DIFFICULT TASK IS THAT OF TRANSLATING BROAD, VAGUE GOALS INTO MORE SPECIFIC OBJECTIVES OR OUTCOMES. THE FOLLOWING QUALITIES ARE NEEDED IF THE OBJECTIVES ARE TO PROVIDE A USEFUL FRAMEWORK FOR APPRAISING THE RESULTS OF ANY EDUCATIONAL EXPERIENCE:

- A. THE SPECIFIC OBJECTIVES ARE AGREED UPON AS REPRESENTING THE GENERAL GOALS.
- B. THE SPECIFIC OBJECTIVES HAVE COMMON MEANING TO ALL READERS.
- C. THE SPECIFIC OBJECTIVES ARE CLOSELY RELATED TO STUDENT BEHAVIOR.

THE GREATEST EXAMPLE OF THE PRODUCT EVALUATION APPROACH IS THE NATIONAL EDUCATIONAL ASSESSMENT PROJECT WHICH WAS UNDER THE DIRECTION OF RALPH TYLER. AS YOU PROBABLY KNOW, INSTRUMENTS ARE BEING OR HAVE BEEN CONSTRUCTED BY FOUR LEADING TEST DEVELOPMENT AGENCIES IN THE FIELDS OF:

- | | |
|----------------------------------|-------------------------|
| A. READING AND THE LANGUAGE ARTS | E. CITIZENSHIP |
| B. SCIENCE | F. FINE ARTS |
| C. MATHEMATICS | G. VOCATIONAL EDUCATION |
| D. SOCIAL STUDIES | |

LET'S JUST FOCUS ON THE ASSESSMENT IN THE FIELD OF SCIENCE FOR THE PURPOSE OF THIS PAPER. THE DELINEATION OF THE MAJOR OBJECTIVES INTO PERFORMANCE TERMS HELPS TO ILLUSTRATE HOW IT CAN BE DONE. OF COURSE, THE WHOLE PROJECT IS AIMED AT REFLECTING THE CONTRIBUTIONS OF SCIENCE TO THE EDUCATION OF STUDENTS WHICH THE SCHOOLS ARE SERIOUSLY SEEKING TO ATTAIN. FOUR MAJOR GOALS OF SCIENCE EDUCATION WERE ARRIVED AT BY A DISTINGUISHED PANEL OF NATIONAL LEADERS IN THE FIELD.

THESE FOUR GOALS ARE THAT STUDENTS SHOULD COME TO:

- I. KNOW THE FUNDAMENTAL FACTS AND PRINCIPLES OF SCIENCE.
- II. POSSESS THE ABILITIES AND SKILLS NEEDED TO ENGAGE IN THE PROCESS OF SCIENCE.
- III. UNDERSTAND THE INVESTIGATIVE NATURE OF SCIENCE.
- IV. HAVE ATTITUDES ABOUT AND APPRECIATIONS OF SCIENTISTS, SCIENCE, AND THE CONSEQUENCES OF SCIENCE THAT STEM FROM ADEQUATE UNDERSTANDING.

LET US SEE, FOR INSTANCE, HOW GOAL II WAS TRANSLATED INTO BEHAVIORAL TERMS. NOTICE THEY HAVE IDENTIFIED FOR DEMONSTRATION, TEN ABILITIES AND SKILLS NECESSARY TO ENGAGE IN THE PROCESSES OF SCIENCE.

GOAL II. POSSESS THE ABILITIES AND SKILLS NEEDED TO ENGAGE IN THE PROCESS OF SCIENCE.

1. ABILITY TO IDENTIFY AND DEFINE A SCIENTIFIC PROBLEM.
2. ABILITY TO SUGGEST OR RECOGNIZE A SCIENTIFIC HYPOTHESIS.
3. ABILITY TO PROPOSE OR SELECT VALIDATING PROCEDURES, BOTH LOGICAL AND EMPIRICAL.
4. ABILITY TO OBTAIN REQUISITE DATA.
5. ABILITY TO INTERPRET DATA.
6. ABILITY TO CHECK THE LOGICAL CONSISTENCY OF HYPOTHESES WITH RELEVANT LAWS, FACTS, OBSERVATIONS, OR EXPERIMENTS.
7. ABILITY TO REASON QUANTITATIVELY AND SYMBOLICALLY.
8. ABILITY TO DISTINGUISH AMONG FACT, HYPOTHESIS, AND OPINION, THE RELEVANT FROM THE IRRELEVANT, AND THE MODEL FROM THE OBSERVATIONS THE MODEL WAS DEvised TO DESCRIBE.
9. ABILITY TO READ SCIENTIFIC MATERIALS CRITICALLY.
10. ABILITY TO EMPLOY SCIENTIFIC LAWS AND PRINCIPLES IN FAMILIAR OR UNFAMILIAR TERMS.

WHAT DESIRABLE BEHAVIOR DID THEY ENUMERATE RELATIVE TO THE GOAL DEALING WITH ATTITUDES AND APPRECIATION? WELL, LET'S TAKE A LOOK.

GOAL IV. HAVE ATTITUDES ABOUT AND APPRECIATIONS OF SCIENTISTS, SCIENCE, AND THE CONSEQUENCES OF SCIENCE THAT STEM FROM ADEQUATE UNDERSTANDING.

1. RECOGNIZE THE DISTINCTION BETWEEN SCIENCE AND ITS APPLICATIONS.
2. HAVE ACCURATE ATTITUDES ABOUT SCIENTISTS.
3. UNDERSTAND THE RELATIONSHIP BETWEEN SCIENCE AND MISCONCEPTIONS OR SUPERSTITIONS.
4. BE READY AND WILLING KNOWINGLY TO APPLY AND UTILIZE BASIC SCIENTIFIC PRINCIPLES AND APPROACHES, WHERE APPROPRIATE IN EVERYDAY LIFE.
5. BE INDEPENDENTLY CURIOUS ABOUT AND PARTICIPATE IN SCIENTIFIC ACTIVITIES.

THE WHOLE POINT OF THE REFERENCE TO THE NATIONAL EDUCATIONAL ASSESSMENT PROJECT IS TO DEMONSTRATE HOW SOME PEOPLE HAVE TRANSLATED OR EXPANDED GOALS INTO A DEFINITE CHANGE RESULTING FROM AN EDUCATIONAL EXPERIENCE.

I AM NOT SUGGESTING THIS IS AN EASY TASK, BUT I AM SUGGESTING IT CAN BE DONE. WE CANNOT SIT BACK AND LET A FEW PEOPLE IN THE GRADUATE SCHOOLS AND UNIVERSITIES DO IT FOR US. NEITHER CAN WE DISREGARD OUR PROFESSIONAL RESPONSIBILITY BY SAYING WE DO NOT HAVE THE INSTRUMENTS TO MEASURE ALL OF THE QUALITATIVE CHANGES IN BEHAVIOR WHICH MAY OCCUR AMONG STUDENTS. THE ONLY WAY WE ARE GOING TO CRACK THIS 'NUT' IS TO TRY IT.

WHEN SHOULD EVALUATION BE ATTEMPTED?

THERE ARE MANY SITUATIONS IN EDUCATION IN WHICH EVALUATION CAN BE USED. HOWEVER, I THINK THE MOST APPROPRIATE USE, FROM OUR POINT OF VIEW, IS ITS APPLICATION TO THE SO-CALLED PILOT PROGRAM. AS YOU WELL KNOW, THE PURPOSE OF

A PILOT PROGRAM IS TO DETERMINE WHETHER AN ACTIVITY WILL LEAD TO INCREASED KNOWLEDGE AND/OR SKILLS FOR THOSE EXPOSED TO THE PROGRAM. IF THOSE STUDENTS EXPOSED SHOW SIGNIFICANT GAINS AS A RESULT OF THE PROGRAM, THEN IT CAN BE INCORPORATED INTO THE OVERALL CURRICULUM ON A PERMANENT BASIS. IT ENABLES US TO TEST A PARTICULAR APPROACH WITHOUT MAKING A FULL-SCALE COMMITMENT.

THE PURPOSE OF ANY PILOT PROGRAM IS DEFEATED IF IT IS NOT ADEQUATELY EVALUATED. THE RESULT, OR OUTCOME, OF A PILOT PROGRAM MUST BE EVALUATED IN TERMS OF SPECIFIC CRITERIA BEFORE ONE CAN BE ASSURED OF ITS PERMANENT INCLUSION IN THE CURRICULUM.

THUS, EVALUATION MUST BE AN INTEGRAL PART OF A PILOT PROGRAM. IN DESIGNING THE PROGRAM, EVALUATION NEEDS TO BE DESIGNED IN. IT SHOULD NOT COME AS AN AFTER-THOUGHT TO AN ALREADY EXISTING PROGRAM, BUT AS A BASIC PART OF THE PROGRAM ITSELF.

WHAT IS THE PRESENT TREND IN EVALUATION?

THE WAY I WOULD LIKE TO ANSWER THIS QUESTION IS TO VERY BRIEFLY ENUMERATE SOME OF THE HIGH LIGHTS IN THE HISTORY OF EVALUATION.

EVALUATION OF EDUCATION HAS A HISTORY AS LONG AS THAT OF EDUCATION ITSELF.

1. APPRAISING HUMAN BEHAVIOR BECAME COMMON ONLY IN THE LATTER PART OF THE 19TH CENTURY.
2. ACCREDITATION OF SECONDARY SCHOOLS BY REGIONAL GROUPS OF COLLEGES BEGAN ABOUT 1900.
3. TEST AND MEASUREMENT MOVEMENT RECEIVED GREAT IMPETUS DURING 1920'S.
4. A PENNSYLVANIA STUDY CONDUCTED ABOUT 1928-38 BY WOOD AND LEARNED SET OUT TO REVIEW THE SYSTEM OF SCHOOLING IN THE LIGHT OF OBJECTIVE EVIDENCE. THE PROJECT SEEMED TO MEASURE SUPERFICIAL KNOWLEDGE OF FACTS RATHER THAN DEEP KNOWLEDGE AND THOUGHT PROCESSES. WOOD LATER ESTABLISHED THE COOPERATIVE TEST SERVICE, WHILE LEARNED ESTABLISHED THE GRADUATE RECORD EXAMINATION.

5. SINCE WORLD WAR II THE FOCUS OF INTEREST AND EFFORT APPEARS TO HAVE SHIFTED AWAY FROM A RESEARCH ORIENTED ATTEMPT TO DEVELOP NEW AND BETTER EVALUATION PROCEDURES TO AN ACTION RESEARCH ORIENTED TO INVOLVE SCHOOL PERSONNEL IN EVALUATING THEIR OWN PROGRAMS. THIS TYPE OF SELF EVALUATION HAS BEEN DEFENDED ON THE GROUND THAT THE EVALUATION EXPERIENCE WILL BE A VALUABLE LEARNING EXPERIENCE FOR THE TEACHERS WHO ENGAGE IN IT.
6. RECENT LITERATURE, HOWEVER, APPEARS TO INDICATE A STRONG RESURGENCE OF THE RESEARCH ORIENTATION TYPE OF EVALUATION WITH EMPHASIS ON THE PRODUCT.
7. APPEARING ON THE HORIZON IS THE CHALLENGE OF PROGRAM ANALYSIS OR SYSTEM ANALYSIS. THIS TYPE OF APPROACH HAS BEEN GIVEN IMPETUS BY ITS SUCCESSFUL USE IN INDUSTRY AND THE AVAILABILITY OF TOOLS, SUCH AS COMPUTERS. SYSTEMS ANALYSIS IS A COST-BENEFITED MANAGEMENT TYPE OF PROCESS. ATTACHING NEW PROGRAMS, ESPECIALLY THE FEDERAL PROGRAMS, TO THE ALREADY EXISTING SCHOOL ENTERPRISE IS LIKE HANGING CHRISTMAS BULBS ON A CHRISTMAS TREE. IT BECOMES VERY DIFFICULT TO MEASURE THE EFFECT OF ANY ONE OF THESE ATTACHED PROGRAMS ON THE EXISTING EDUCATIONAL ENTERPRISE. SYSTEMS ANALYSIS HOLDS PROMISE OF DOING THIS JOB. HOWEVER, IN ITS EMBRYOTIC STAGE IT TOO SEEMS TO BE CONCENTRATING ON STRUCTURES AND PROCESSES. WHAT IS EVENTUALLY HOPED FOR IS AN INTERFACING OF THE THREE DOMAINS: STRUCTURE, PROCESS, AND PRODUCT.

CONCLUSION

AS I SAID IN THE BEGINNING, EVALUATION IS A VERY BROAD TOPIC AND IT'S DIFFICULT TO COVER ALL OF ITS RAMIFICATIONS IN SUCH A SHORT LENGTH OF TIME. I HAD TRIED TO FOCUS ON THOSE AREAS WHICH I THOUGHT WOULD BE MOST PERTINENT TO YOUR WORK TODAY. I HAVE ATTEMPTED TO PIN-POINT SOME OF THE PRINCIPLES AND PRACTICES WHICH I THOUGHT WOULD BE OF THE GREATEST VALUE TO YOU. I TRIED TO CENTER ON THE TRANSLATION OR EXPANSION OF GOALS INTO PERFORMANCE TERMS AS THEY RELATE TO THE "PRODUCT TYPE" EVALUATION. HOWEVER, YOU MUST REMEMBER THERE ARE SEVERAL OTHER STEPS IN THE EVALUATION PROCESS WHICH WERE NOT TREATED AT ALL. THESE STEPS CAN ALSO BECOME QUITE STICKY. ONCE YOU HAVE EXPANDED YOUR GOALS INTO PERFORMANCE TERMS, THEN YOU WILL BE FACED WITH THE FOLLOWING TASKS:

- A. THE SELECTION OR DEVELOPMENT OF INSTRUMENTS OR TESTS TO COLLECT YOUR DATA.
- B. THE ORGANIZATION OF YOUR DATA.
- C. THE ANALYSIS OF YOUR DATA.
- D. THE INTERPRETATION OF THE RESULTS.

UNDOUBTEDLY, SOME OF THESE TASKS WILL PROBABLY CALL FOR SPECIAL COMPETENCIES WHICH NOT ALL OF US POSSESS. FOR THE BENEFIT OF THOSE OF YOU WHO WOULD LIKE TO PURSUE THIS TOPIC OF EVALUATION AT GREATER LENGTH, I HAVE PREPARED A BIBLIOGRAPHY TO DISTRIBUTE AMONG YOU. IT CAN BE USED AS A GUIDE-POST IN YOUR READING.

BIBLIOGRAPHY

BOOKS AND PAMPHLETS

- Adams, Georgia S. Measurement and Evaluation in Education, Psychology, and Guidance. New York: Holt, Rinehart and Winston, 1964.
- Bloom, Benjamin S. (ed.). Taxonomy of Educational Objectives, Handbook I: Cognitive Domain. New York: David McKay Company, Inc., 1956.
- Boardman, Charles E., et al. Democratic Supervision in Secondary Schools. New York: Houghton Mifflin Company, 1953.
- Brumbaugh, A. J. "Evaluation of Schools," Educators Encyclopedia, Englewood Cliffs, New Jersey: Prentice-Hall, 1961, pp. 424-429.
- Bureau of Budget and Management Research. Budget Manual. Department of Finance, City of Baltimore, Maryland, January, 1966.
- Callahan, Raymond E. Education and the Cult of Efficiency. Chicago: The University of Chicago Press, 1962.
- Chamberlin, Leo M. The Teacher and School Organization. New York: Prentice-Hall, 1958.
- Cooperation in General Education: A Final Report of the Executive Committee of the Cooperative Study in General Education. Washington: American Council on Education, 1947.
- Dressel, Paul L. (ed.). Evaluation in General Education. Dubuque, Iowa: William C. Brown Company, 1954.
- _____. "Measurement and Evaluation," Thirteenth Yearbook (1960) of American Association of Colleges for Teacher Education. Washington: The Association, 1960, pp. 45-52.
- _____, (and Associates). Evaluation In Higher Education. Boston: Houghton Mifflin Company, 1961.
- _____, and Lewis B. Mayhew. Critical Analysis and Judgment in the Humanities. Dubuque, Iowa: William C. Brown Company, 1956.
- _____, and Lewis B. Mayhew. General Education: Explorations in Evaluation. Washington: American Council on Education, 1954.
- Educational Testing Service. A Plan for Evaluating the Quality of Educational Programs in Pennsylvania: A Report From Educational Testing Service to the State Board of Education, June 30, 1965. Harrisburg: State Board of Education, 1965.

Evaluative Criteria, 1960 Edition. Washington: National Study of Secondary School Evaluation, 1960.

Firman, William D., et al. Procedures in School Quality Evaluation. Albany: The University of the State of New York, the State Education Department, 1961.

Garber, Lee O. The Law Governing School Board Members and School Board Meetings. Danville, Illinois: Interstate Printers and Publishers, 1963.

Gross, Neal and Robert E. Herriott. Staff Leadership in Public Schools: A Sociological Inquiry. New York: John Wiley and Sons, Inc., 1965.

Grossman, Alvin and Robert L. Howe. Data Processing for Educators. Chicago: Educational Methods, Inc., 1965.

Hisch, Werner Z. "Education in the Program Budget," Program Budgeting, David Novick, editor. Washington: U. S. Government Printing Office, 1965. Ch. 6, pp. 131-54.

_____, Elbert W. Sagelhorst, and Morton J. Marcus. Spillover of Public Education Costs and Benefits. Los Angeles: Institute of Government and Public Affairs, University of California, 1964.

Kershaw, J. A. and R. N. McKean. Systems Analysis and Education. Santa Monica, California: The Rand Corporation.

Krathwohl, David R., Behjamin S. Bloom, and Bertram B. Masia. Taxonomy of Educational Objectives, Handbook II; Affective Domain. New York: David McKay Company, Inc., 1964.

Leonard, John P., and A. C. Eurich. An Evaluation of Modern Education. New York: The Appleton Company, 1942.

Mort, Paul R., W. S. Vincent, and C. A. Newell. The Growing Edge. New York: Metropolitan School Study Council, 1957.

National Education Association Committee on Tax Education and School Finance. Does Better Education Cost More? Washington: The Association, 1959.

Office of Professional Development and Welfare, National Education Association. Profiles of Excellence. Washington: The Association, 1966.

Reutter, E. Edmund. The Administrator and Subversive Activities. New York: Bureau of Publications, 1951.

- Shane, Harold G. and E. T. McSwain. Evaluation and the Elementary Curriculum. New York: Henry Holt and Company, 1951.
- Smith, Eugene R., Ralph W. Tyler, and the Evaluation Staff. Appraising and Recording Student Progress. New York: Harper and Brothers, 1942.
- Thorndike, Robert L., and Elizabeth Hagen. Measurement and Evaluation in Psychology and Education (Second Ed.). New York: John Wiley and Sons, Inc., 1961.
- Tope, Donald E. The Social Science View of School Administration. Englewood, New Jersey: Prentice-Hall, 1965.
- Travers, Robert M. W. Educational Measurement. New York: The MacMillan Company, 1955.
- Trow, William Clark. Scientific Method in Education. Boston: Houghton Mifflin Company, 1925.
- Tyler, Ralph W. Basic Principles of Curriculum and Instruction. Chicago: The University of Chicago Press, 1950.
- Webb, Eugene J., et al. Unobtrusive Measures: Nonreactive Research in the Social Sciences. Chicago: Rand McNally, 1966.

PERIODICALS AND UNPUBLISHED MATERIALS

- Benson, Charles S. "Measurement of Quality in Education," Science Education, 50:283-5, April, 1966.
- Boykin, L. L. "What is Evaluation?" Progressive Education, 34:16-18, January, 1957.
- Blanchard, B. E. "Meaning of Evaluation in Education," Bulletin of The National Association of Secondary School Principals, 40:39-45, May, 1956.
- Brumbaugh, A. J. "Role of Evaluation in the Development and Improvement Of Regional Programs of Higher Education," Journal of Experimental Education, 25:43-8, September, 1956.
- Coleman, James S., et al. U. S. Office of Education, "Equality of Educational Opportunity," 1966.
- Cook, Desmond L. "An Introduction to PERT." Columbus, Ohio: Bureau of Educational Research and Service. Ohio State University, 1964. (Mimeographed.).
- Coon, Lewis H. "Applying PERT to a Variable Manipulating Project." Columbus, Ohio: Bureau of Educational Research and Service, Ohio State University, 1964 (Mimeographed.).
- Dilley, Frank B. "Program Budgeting in the University Setting," Educational Record, Fall 1966.
- Dyer, Henry S. "The Pennsylvania Plan," Science Education, 50:242-8, April, 1966.
- Ebel, Robert L. "Some Measurement Problems in a National Assessment of Educational Progress," Journal of Educational Measurement, 3:11-17, Spring 1966.
- Exton, Elaine. "Federal Program Budgeting Is a Step Toward Centralized Educational Planning," American School Board Journal, November, 1966.
- _____. "Here's How HEW Department Applies Planning-Programming-Budgeting System," American School Board Journal, December, 1966.
- _____. "USOE Uses Computer-Based Models to Evaluate Education," American School Board Journal, January, 1967.
- Firman, William D. "The Quality Measurement Project in New York State," Science Education, 50:259-79, April, 1966.

- _____. "The Relationship of Cost to Quality in Education." A paper presented to the Committee on Educational Finance, National Education Association, St. Louis, Missouri, April 8, 1963. (Mimeographed.).
- _____. "Which Schools are Better?" NEA Research Bulletin, 41:83-9, October, 1963.
- Flanagan, John C. "Evaluating Educational Outcomes," Science Education, 50:248-51, April, 1966.
- Frymier, Jack R. "Curriculum Assessment: Problems and Possibilities," Educational Leadership, 24:124-8, November 1966.
- Gerberich, J. Raymond. "Assessment: A Forward Look," Educational Leadership, 24:115-8, November, 1966.
- "Good School Value to Student Doubled," The Houston Post, January 2, 1967.
- Hagen, Elizabeth P. and Robert L. Thorndike. "Evaluation," Encyclopedia of Educational Research (Third Ed.) New York: The MacMillan Company, 1960, pp. 482-6.
- Hand, Harold C. "National Assessment Viewed as the Camel's Note," Phi Delta Kappan, 67:8-13, September, 1965.
- Harris, Chester W. "The Appraisal of a School: Problems for Study," Journal of Educational Research, 41:172-83, November, 1947.
- Hastings, J. Thomas. "Curriculum Evaluation: The Why of the Outcomes," Journal of Educational Measurement, 3:27-32, Spring, 1966.
- Hollister, Robinson G., Jr. "A Decision-Making Budget," Educational Record, Fall, 1966.
- "How to Evaluate Federal Programs," Nation's Schools, 77:5, May, 1966.
- Howe, Harold II. "Growth and Growing Pains," Saturday Review, 49:68-70, 87, December 17, 1966.
- Howsam, Robert B. "Teacher Evaluation: Facts and Folklore," National Elementary Principal, 43:7-18, November, 1963.
- Journal of Educational Measurement, 3:1-65, Spring, 1966, (entire issue).
- Kropp, R. P. "Evaluation Promotes Understanding of the Total School Program," School Review, 63:446-7, November, 1955.

- Krooker, E. W. "Standards Versus Evaluation," Educational Administration and Supervision, 41:385-9, November, 1955.
- Maccia, George S. An Educational Theory Model: General Systems Theory. Columbus, Ohio: Bureau of Educational Research and Service, Ohio State University, 1962. (Mimeographed.).
- McDonald, Arthur S. "Some Pitfalls in Evaluating Progress in Reading Instruction," Phi Delta Kappan, 65:336-8, April, 1964.
- Merwin, Jack C. "The Progress of Exploration Toward A National Assessment of Educational Progress," Journal of Educational Measurement, 3:5-10, Spring, 1966.
- Mood, Alexander M. "Measurement of Quality in Education," Science Education, 50:279-83, April, 1966.
- Nichols, Robert C. "Schools and the Disadvantaged," Science, 154:1312-1314, December 9, 1966.
- Raths, L. E. "Basis For Comprehensive Evaluation," Educational Research Bulletin, 17:57-84, March, 1938.
- _____. "Role of Evaluation in Research Design," Educational Leadership, 13:412-14, April, 1956.
- _____. "Evaluating the Program of a School," Educational Research Bulletin, 17:57-84, November, 1938.
- Ryan, T. Antionette. "Testing Instructional Approaches for Increased Learning," Phi Delta Kappan, 66:534-6, June, 1965.
- Shaftel, F. R. "Evaluation For Today and for the Future," Educational Leadership, 14:292-8, February, 1957.
- Shane, Harold B. and Edward T. McSwain. "Evaluation of the Educational Program," Review of Educational Research, 23:171-80, October 1953.
- Smallenberg, C. J. "Sound Evaluation," Educational Leadership, 21:11-16, October, 1963.
- Smith, Dora V. "Recent Procedures in the Evaluation of Programs in English," Journal of Educational Research, 38:262-75, March, 1944.
- Stufflebeam, Daniel L. Applying PERT to a Test Development Project. Columbus, Ohio: Bureau of Educational Research and Service, Ohio State University, 1964. (Mimeographed.).
- Thomas, J. Alan. "Efficiency in Education." Paper Presented to American Education Research Association Meeting, Chicago, February 15, 1963. (Mimeographed.).

Tyler, Ralph W. "Assessing the Progress of Education," Phi Delta Kappan, 67:13-18, September, 1965.

_____. "Assessing the Progress of Education," Science Education, 50: 239-42, April, 1966.

_____. "The Objectives and Plans for a National Assessment of Educational Progress," Journal of Educational Measurement, 3:1-4, Spring, 1966.

_____. "Defining and Measuring Objectives of Progressive Education," Educational Research Bulletin, 15:67-71, 1936.

_____. "Modern Aspects of Evaluation," California Journal of Secondary Education, 29:410-412, 1954.

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